

1 WHAT IS CLAIMED IS:

2 1. A brightness adjusting apparatus for adjusting a  
3 brightness balance of a pair of images outputted from a  
4 stereoscopic camera having a first camera imaging a reference  
5 image and a second camera imaging a comparison image, comprising:

6 an adjusting means for adjusting said brightness  
7 balance by varying a gain;

8 a distance data calculating means for finding a pixel  
9 block having a brightness correlation with a pixel block of said  
10 reference image in said comparison image and for calculating a  
11 distance data based on a city block distance between both pixel  
12 blocks;

13 a distance data assigning means for assigning said  
14 distance data to said pixel block of said reference image;

15 a first evaluation window establishing means for  
16 establishing a first evaluation window composed of a plurality  
17 of pixel blocks in said reference image;

18 a parallax calculating means for calculating a  
19 parallax based on said distance data;

20 a second evaluation window establishing means for  
21 establishing a second evaluation window composed of a plurality  
22 of pixel blocks in said comparison image based on said parallax;

23 a first evaluation value calculating means for  
24 calculating a first evaluation value representing a magnitude  
25 of an entire brightness of said first evaluation window;

1 a second evaluation value calculating means for  
2 calculating a second evaluation value representing a magnitude  
3 of an entire brightness of said second evaluation window; and  
4 a correcting means for correcting said gain so as to  
5 reduce the difference between said first evaluation value and  
6 said second evaluation value.

7  
8 2. The apparatus according to claim 1, wherein  
9 said second evaluation window is established in a  
10 horizontally offset position from said first evaluation window.

11  
12 3. The apparatus according to claim 1, wherein  
13 said parallax is calculated based on a histogram of  
14 said distance data.

15  
16 4. The apparatus according to claim 1, wherein  
17 said parallax is calculated based on a mean value of  
18 said distance data.

19  
20 5. The apparatus according to claim 1, wherein  
21 said second evaluation window is established in a  
22 horizontally offset position by an amount of said parallax from  
23 said first evaluation window.

24  
25 6. The apparatus according to claim 1, further

1 comprising;

2 a correlation coefficient calculating means for  
3 calculating a correlation coefficient based on said first  
4 evaluation value and said second evaluation value.

5

6 7. The apparatus according to claim 6, wherein  
7 said first evaluation value and said second evaluation  
8 value are verified by said correlation coefficient.

9

10 8. The apparatus according to claim 1, wherein  
11 said second evaluation window is established by  
12 finding a pixel block having a largest brightness correlation  
13 with a pixel block of said first evaluation window in said  
14 comparison image within a specified range on the basis of a  
15 reference point established based on said parallax.

16

17 9. The apparatus according to claim 1, wherein  
18 said parallax is calculated only based on said distance  
19 data of a pixel block having a larger variation of brightness  
20 than a threshold value.

21

22 10. The apparatus according to claim 1, wherein  
23 said first evaluation value and said second evaluation  
24 value are calculated from at least one pair of first and second  
25 zones prepared in said reference image and said comparison image,

1 respectively and said pair of zones are established being  
2 horizontally offset by an amount of pixels according to the  
3 position of said zones.

4

5 11. The apparatus according to claim 10, wherein  
6 said amount of pixels are established in consideration  
7 of a tendency of a distance to an solid object projected in said  
8 first zones.

006280 50205960